WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

DGER NEWS

DIVISION OF GEOLOGY AND EARTH RESOURCES
"Washington State's Geological Survey since 1890"

Website: http://www.dnr.wa.gov/geology/ Vol. 3, No. 2, Summer 2006

2006 LEGISLATIVE REPORT

by Ron Teissere, State Geologist

The Department of Natural Resources (DNR) included one FY07 supplemental budget request and four request-legislation items on behalf of the Division of Geology and Earth Resources in its 2006 legislative package. The budget request was for $496,000 to fund seismic risk and landslide projects. The request legislation included:

- Senate Bill 6175 proposing changes to the Surface Mine Reclamation Act that included a fee increase and changes to the performance-bond provisions,
- House Bill 2384 proposing a comprehensive update of the Geological Survey Act, the enabling act for the Division,
- House Bill 2428 proposing to add cost-reimbursement provisions to the Oil and Gas Conservation Act, and
- House Bill 3084 proposing establishment of an external committee to review the regulation of oil and gas exploration and development and make recommendations to the legislature.

The most complex of the proposals was SB 6175. The original version submitted by DNR was not acceptable to the senate. The Senate Natural Resources Committee modified the proposal to one that the aggregate mining industry opposed. The legislature recognized that without a substantial fee increase, the Surface Mine Reclamation Program would cease to exist. At the last moment, a compromise was reached and the bill, along with the necessary increased appropriation, was passed by both houses. After signature by the Governor (Fig. 1), the legislation resulted in the addition of five positions to the program.

HB 2384 (Fig. 2) was a proposal to adopt modern enabling legislation for the Division, which is the state's geological survey. The existing legislation dates back to statehood. The Geological Survey Act sets out the mission, duties, and responsibilities of the survey. The state's need for geological information was quite different at statehood than it is today. Unfortunately, the legislature did not accept the proposed comprehensive

Figure 1. Governor Christine Gregoire signs Engrossed Second Substitute Senate Bill 6175 on March 30, 2006. From left to right are Commissioner of Public Lands Doug Sutherland, Assistant State Geologist Dave Norman, Heath Packard of Audubon Washington, Governor Gregoire, Sue Danver of the Black Hills Audubon Society, DNR Governmental Relations Director Michael Eklund-Grayum, Senator Jim Hargrove, and Lori Evans of Kinross Gold Corporation.

Figure 2. Governor Christine Gregoire signs Substitute House Bill 2384 into law on March 30, 2006. From left to right are Susan Tallis (legislative intern for Rep. Dickerson), legislative staffer Jenny Egan, Assistant State Geologist Dave Norman, Governor Gregoire, DNR Governmental Relations Director Michael Eklund-Grayum, Commissioner of Public Lands Doug Sutherland, Representative Mary Lou Dickerson (principal sponsor of SHB 2384), and Senator Jim Hargrove.

Continued on next page

WASHINGTON PROSPECTORS MINING ASSOCIATION GOLD SHOW

For the third year in a row, the Division of Geology and Earth Resources has participated in the "Gold Show", which is held in February every year at the Washington State Fairgrounds in Monroe. The booth is staffed by Geology librarian, Lee Walkling.

"I hand out copies of the flyer 'Geology in the Public Interest', as well as copies of the Washington State Geo-Quiz (http://www.dnr.wa.gov/geology/esweek/geoquiz.htm) and the Washington State geologic map postcards. I always take along 300 copies of the DGER Internet homepage so I can show people how to access various types of information they request," said Lee.

Geology librarian Lee Walkling answers questions at the DGER booth. Photo courtesy of the Washington Prospectors Mining Association.

Last year there were many inquiries about the Division reprinting Bulletin 42, 'Gold in Washington', which has been out of print for years. With Karen Meyers' help, the bulletin was scanned and put online (http://www.dnr.wa.gov/geology/pubs/b42.pdf) the day before the Gold Show. That garnered many thanks!

"I originally went to the Gold Show to put a human face to a misunderstood 'guvment' agency," Lee said. "I wanted the general population to know what we do and why it's important. That's still a motivation, but I also go because it's fun. I get to be a librarian and answer questions. I get to talk to folks I wouldn't meet otherwise, so I learn quite a lot, too. Prospectors are a diverse, interesting group of people."

The show is hosted by the Washington Prospectors Mining Association (WPMA), the largest nonprofit small-scale mining association in the State of Washington. Photos from the 2005 show are online at http://www.washingtonprospectors.org/. This year's photos will be posted soon. ■

The Gold Show draws quite a crowd. Photo courtesy of the Washington Prospectors Mining Association.

2006 LEGISLATIVE REPORT *(Continued from p. 1)*

rewrite, but simply added a section charging the survey with the duty to perform assessments of the state's geological hazards. This change was enough for us to tie HB 2384 into the supplemental budget request and actually increase the request slightly. The ultimate result was updated geologic hazard language and an FY07 appropriation of $654,000 for geologic hazard assessment work. The Division will be funding three staff positions and contracting with the University of Washington's GeoMapNW group to get the work done.

Neither HB 2428 nor HB 3084 made it out of committee. Two other bills dealing with oil and gas exploration and development also died during the session. However, at the last moment, the senate added in a budget proviso appropriating $50,000 for an external committee composed of DNR, industry, state agency, and environmental groups to review the existing regulatory framework and report back to the legislature.

The results from the 2006 Legislature represented a major recovery from the drastic budget declines of recent years. The support and interest the Division received from DNR's Executive Management group, especially Commissioner Doug Sutherland, was the strongest and most effective we have received during my tenure. Of course, we could not have done this without the dedicated people of the Division who have contributed so much to our knowledge of Washington's geology over the years (Fig. 3). And our sincere thanks go out to those people in the earth science community who took time to testify, contact their legislators, write letters, and find ways to actively support our efforts. ■

Figure 3. Commissioner of Public Lands Doug Sutherland and Assistant State Geologist Dave Norman present the award winning Geologic Map of Washington (GM-53) to Governor Christine Gregoire. From left to right are Doug Sutherland, Dave Norman, Governor Gregoire, Susan Tallis (legislative intern for Representative Dickerson), Representative Mary Lou Dickerson, DNR Governmental Relations Director Michael Eklund-Grayum, legislative staffer Jenny Egan, and Senator Jim Hargrove. The map may be ordered from the Washington State Department of Printing at http://www.prt.wa.gov, click on General Store/Shop by Agency/Department of Natural Resources (Geology Division)/Geologic Maps/. The PDF may be viewed and downloaded at http://www.dnr.wa.gov/geology/pubs/gm53.htm.

BLOWOUT AT THE CLEVELAND MINE IN STEVENS COUNTY

by Fritz E. Wolff

Some time during the first week in May, the lower adit at the Cleveland mine, 12 miles east of Hunters in Stevens County, discharged a sudden release of impounded water estimated at several million gallons. The iron-stained walls in Figure 1 (taken at the point of release in 2002) show that similar discharges have happened in the past.

Figure 1. Pre-blowout water discharge at the lower adit. Note the iron staining on the wall to a height of about 36 inches.

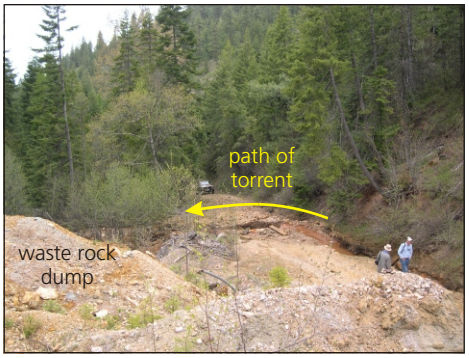


Figure 2. Damage to the mine access road near the point of release (Fig. 1). Photo by Michael Hepp, DOE.

Figure 3. Damage to the streambed near the mine access road. Photo by Michael Hepp, DOE.

The U.S. Bureau of Land Management (BLM) and the Washington Department of Ecology (DOE) examined the damage and characterized the recent flow as a debris torrent of water and rock. It undercut the mine access road (Fig. 2), damaged the streambed (Fig. 3), and built up debris dams of mill tailings, timber, and brush as far as one-half mile downstream (Fig. 4). The torrent bypassed two mill-tailing piles reclaimed and removed from the streambed on federal land by the BLM in 1999.

The accumulation of water inside the mine may have been a result of groundwater inflows, surface runoff into an underground glory hole connected to the lower adit (Fig. 5), or a combination of the two sources.

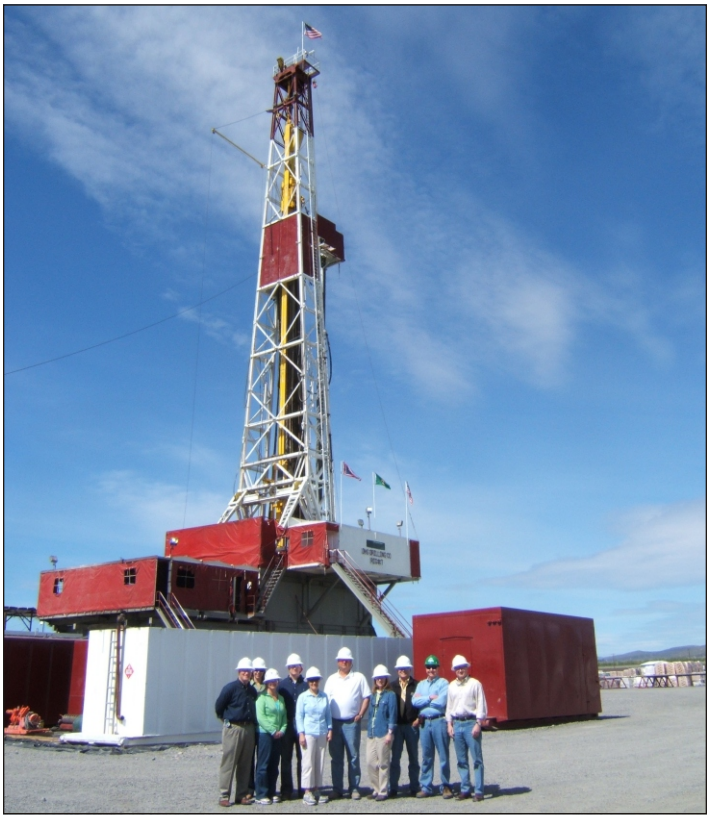
The Cleveland mine lies on privately owned patented mining claims. It operated sporadically from 1918 to 1970, producing significant quantities of lead, zinc, silver, and antimony.

Information Circular 101, a DGER site-characterization of the mine, is the source of Figures 1 and 5. This report is online at http://www.dnr.wa. gov/geology/iaml/ic101.pdf. Figure 2 here was taken from about the same location as Figure 10 in the report. ■

Figure 4. Debris transported one-half mile downstream. Photo by Michael Hepp, DOE.

Figure 5. Glory hole connected to the lower adit, a possible access route for surface runoff.

Franklin County Landslide. At about 9 p.m. on Saturday, May 13, a large section of bluff sloughed off and covered about a quarter-mile of Road 170 between Klamath and Sheffield roads to a depth of about 40 feet. The slide destroyed a grain bin, damaged power lines and an irrigation circle, and narrowly missed a mobile home. It also choked an irrigation canal, cutting off water to about 20 landowners. A similar landslide happened in almost the same spot about 25 years ago. Photo courtesy of the South Columbia Basin Irrigation District. For more information, go to http://www.tri-cityherald.com/tch/local/story/7730700p-7642338c.html and http://www.tri-cityherald.com/tch/local/story/7756012p-7668230c.html. To see more photos, go to http://cards.webshots.com/invite/pickup/116375117QzYf/album/550362723qTGGUT.

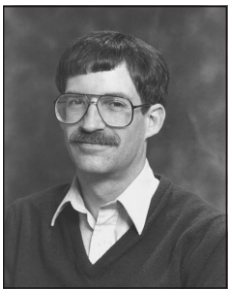


Drilling for Oil and Gas in Washington State. In April, Commissioner of Public Lands Doug Sutherland and State Geologist Ron Teissere visited the EnCana Corporation Anderville Farms 1-6 drill rig, located near Mattawa in Grant County. The well is permitted to drill to 14,000 feet through the Columbia River Basalt Group. From left to right are EnCana lobbyist Brad Boswell, Pam Roth of EnCana, DNR Technical Specialist Mary Ann Shawver, DNR Governmental Relations Director Michael Eklund-Grayum, DNR Constituent Relations Manager Margaret Barrette, Rig supervisor Bill Delahoussaye of Sierra Engineering, DNR Communications Director Patty Henson, Commissioner Sutherland, State Geologist Teissere, and Tim Thompson of EnCana.

UW PROFESSOR RICHARD STEWART DIES

Richard (Dick) Stewart of the University of Washington Department of Earth and Space Sciences died April 17 of a heart attack. His talent, humor, and wit will sorely be missed by his colleagues and former students.

Dick Stewart joined the UW faculty in 1970 after completing his Ph.D. thesis at Stanford University on the geology of the western Olympic Peninsula, Washington.



Dr. Richard J. Stewart

May 30, 1942–
April 17, 2006

Portrait of Richard Stewart by Floyd Bardsley from mid-1980s

Most of his recent research has been on problems of sediment diagenesis, principally in the southern San Joaquin Valley of California and in the Los Angeles Basin. This work, done in collaboration with Dr. T. H. McCulloh, has resulted in quantification of the pressure and temperature regime required for generation of the calcium zeolite laumontite, a major component in porosity-destroying diagenetic assemblages prominently developed in West Coast Mesozoic and Tertiary clastic sediments. A major part of this effort has been the establishment of a vitrinite reflectance facility for determination of degree of thermal alteration of organic matter dispersed in sedimentary rocks.

Additionally, Stewart became involved in sediment provenance studies directed toward determining the nature and mechanism of the Ellesmerian-Brookian sequence transition on Alaska's North Slope, using data developed in the drilling program in Naval Petroleum Reserve No. 4. This work is aimed at furthering our knowledge of the enigmatic 'pebble shale' unit, a prominent reflector of Neocomian age widespread in the subsurface of the North Slope.

In a similar vein, he had been conducting studies of the Tertiary sediments exposed in the grabens of eastern Washington. This work was directed primarily at determining provenance of the deposits, post-depositional changes the sediments may have undergone, and the stratigraphic relationships between the various units.

Richard is survived by Mary Ann, his wife of 46 years. They have two children, Anna and Ian, plus a daughter-in-law Christina. ■

DGER VOLUNTEER GOES OUT IN STYLE

Wayne Johnston lived in Ferntree Gully, Victoria, Australia, but for the last three years, he was a volunteer for the Washington Geology Library. Wayne was born with spina bifida, which put him in a wheelchair for most of his life. That didn't stop him from participating in the world, perhaps more than most people who have the use of their legs. With the advent of the Internet, Wayne was able to travel the world electronically and meet many interesting people.

Wayne in the hospital with his mother Shirley. Photo by J. J. Edmondson.

Wayne was fascinated by geology, particularly volcanoes and tsunamis. An advocate for considering the disabled in hazard mitigation and planning, he happened upon the DGER publication "TsuInfo Alert" and soon was scanning the web for tsunami articles he could pass along to editor Lee Walkling. He had the time and interest to do the research as an unpaid, but much appreciated volunteer.

Several months ago, Wayne learned that his kidneys were failing. He elected not to undergo a transplant or dialysis. He died on April 10 at the age of 33. He was cremated and his ashes will be spread on One Tree Hill (in the Dandenongs, about 20 miles east of Melbourne) along with ash from Mount St. Helens that he had requested from Lee.

Wayne's other love was emergency services, particularly fire fighting, and his funeral brought together two fire departments that he had befriended. One formed his color guard and the other transported his casket to the cemetery on a fire truck.

According to Victoria firefighter Lt. J. J. Edmondson, Wayne was always in communication with his friends from all over the world. "He managed to bring fireys together from all around Victoria (and even some international fireys). He worked with us to plan his own funeral. The IFFD [International Firefighters' Day] ribbon (a piece of red and a piece of blue ribbon pinned together, representing the elements we work with—fire and water) is worn in memory of lost firefighters and as a mark of thanks for their commitment and dedication. Wayne may not have been able to physically be a firefighter, but he had a firefighter's spirit, passion, and compassion, which made him a truly wonderful human being who will be sorely missed by not only his family and friends but also his firefighter friends from all over the world. I am wearing the IFFD ribbon in his memory," Edmondson said.

For more about Wayne, see http://iffd.net/modules/newbb/viewtopic.php?post_id=35&topic_id=17&forum=8. ■

DGER JOB OPENINGS

Closing date June 19, 2006

Geologic Hazards Senior Geologist—Responsible for the preparation of soil liquefaction, soil site condition, and similar hazard assessments related to seismic risk in Washington. [http://www.dnr.wa.gov/jobs/061906_6848.pdf]

Surface Mine Reclamation Geologist — Responsible for implementing the Surface Mine Reclamation Program for compliance, enforcement, and security performance assessments, and providing technical assistance to program clients. Serves as a reclamation and mining expert for the program. [http://www.dnr.wa.gov/jobs/061906_6849.pdf]

Geologic Hazards Scientist 2—Supports the assessment of seismic risk and landslide hazards by the Division. Work includes assessment of slope stability along shorelines, assessment of liquefaction and ground amplification potential of areas of the state, and preparation of databases and maps depicting these hazards. [http://www.dnr.wa.gov/jobs/061906_6847.pdf]

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